Guest Editorial

Environmental Health Science and the Legacy of Popular Literature


David Michaels

There is an extensive and powerful body of American literature that focuses on the relationship of humans with our natural surroundings. We marvel at the natural beauty around us, finding nourishment in what we think of as its unspoiled beauty. In *Walden* (Thoreau 1966), perhaps the most well-known book on our relationship to the environment, Thoreau wrote:

> Our village life would stagnate if it were not for the unexplored forests and meadows which surround it. We need the tonic and wildness, to wade sometimes in marshes where the bittern and the meadow hen lurk, and hear the booming of the snipe; to smell the whispering sedge where only some wilder and more solitary fowl builds her nest, and the mink crawls with its belly close to the ground.

But this relationship is troubled. Countless authors since Thoreau have decried the man-made deformation and disappearance of that thing we call nature. In particular, Aldo Leopold's *A Sand County Almanac* (1949) stands out as a powerful warning of the impending loss of the beauty and complexity of our natural environment as a result of human activity.

In many ways, environmental health sciences are the academic manifestations of this lament. Scientists attempt to understand the effects of toxic agents on our natural surroundings and, of course, on humans. For many of us, the decision to pursue environmental sciences was inspired by powerful books we read at impressionable times in our lives. Now we work to reveal the complexities of the natural environment and to discern the impact of the human footprint. Many of us consider research to be our primary contribution to a sustainable society.

Popular writers recognize the power of literature to captivate and mobilize; they tell stories more compelling than best-selling mysteries. The contributions of these books, although sometimes overly alarmist and occasionally incomplete or inaccurate, have been enormous. To these authors we owe—directly and indirectly—expansion of the federal research agenda to address environmental quality, and public support for measures to reduce the impact of human activity on the environment.

It is difficult to contemplate the history of the environmental movement without crediting the impact of Rachel Carson's *Silent Spring* (1962), which was first published in 1962 after having been serialized in *The New Yorker*. *Silent Spring* made a powerful argument that the overuse of pesticides (particularly DDT) had an enormous, complex impact on wildlife and human health. Carson's influence was rooted in her passionate presentation; her readers linked the overuse of these chemicals to changes in the natural world around them that they could perceive and regret. *Silent Spring* transformed America by illuminating, as never before, the trade-off between unfettered development and nature; the environmental movement grew from those who demanded a reevaluation of that trade-off and fostered a powerful movement to reevaluate that trade-off.

At the time *Silent Spring* (Carson 1962) was published, the federal government's research on pesticides and other environmental toxicants was scant and unfocussed. In response to the outcry the book engendered, President John F. Kennedy tasked his Presidential Science Advisory Committee to examine the use of pesticides. The committee report (Presidential Science Advisory Council 1963) called for the eventual "elimination of the use of persistent toxic pesticides" and for greatly augmented federal research.

The formal response to these recommendations, however, was not swift. *Silent Spring* (Carson 1962) helped trigger the remarkably sudden rise of the environmental movement, resulting in the formation of the U.S. Environmental Protection Agency (EPA) and the rapid enactment of laws that have become the foundation for national efforts to clean our air and water. The movement was nourished by books written for the general public by scientists concerned with the impact of modern industry and commerce on humans and our environment. Among the most memorable of these are *The Closing Circle* (1971) by Barry Commoner, *Only One Earth* by Barbara Ward and Rene Dubos (1972), and *The Politics of Cancer* by Samuel Epstein (1979).

Federal funding of research into the health effects of electromagnetic fields can be attributed in large part to *The Zapping of America* (Brodeur 1987) and *Currents of Death* (Brodeur 1989), in which Paul Brodeur made dramatic assertions about the effects of exposure to microwaves and electromagnetic fields associated with power transmission. Brodeur captivated the public by linking the results of scientific investigations with heart-breaking anecdotes of cancer-stricken children. Congress responded by funding a 5-year $60 million research initiative through the Energy Policy Act of 1992.

The lessons of *Silent Spring* (Carson 1962) were not lost on the authors of *Our Stolen Future* (Colborn et al. 1996), who explained in nontechnical terms the scientific evidence on the health effects of "endocrine disruptors." Theo Colborn, Dianne Dumanoski, and John Peterson Myers, the book's authors, presented a compelling case that these chemicals are the cause of developmental and reproductive abnormalities in wildlife and humans. Although this evidence was already familiar to many in the scientific community, the text transformed the scientific discussion into a public policy debate. *Our Stolen Future* (Colborn et al. 1996) played an important role in congressional passage in 1996 of amendments to the Food Quality Protection Act and the Safe Drinking Water Act, the impetus for the U.S. EPA's Endocrine Disruptor Screening Program, a major research initiative focused directly on the issues the book raised (Krimsky 2000).

Scientists are reductionists; as we study the cells of the twigs, many of us forget about the trees, to say nothing of the forests or the biosphere. Popular literature increases the social impact of the work of environmental scientists while reminding us why we selected this field in the first place. This literature shapes our lives directly through inspiration and recruitment of new colleagues, and indirectly through influencing public consciousness and setting federal research priorities. *EHP*'s new Book Review section is a most welcome addition to the journal; it will help us keep up with a literature we often do not acknowledge, but which has an enormous impact on our work and on the world.

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David Michaels served as Assistant Secretary for Environment, Safety, and Health, U.S. Department of Energy, 1998–2001, where he was the chief architect of the historic initiative to compensate workers in the nuclear weapons complex who developed cancer or lung disease as a result of exposure to radiation, beryllium, and other hazards. He is an epidemiologist and was the first recipient of the American Public Health Association's David P. Rall Award for Advocacy in Public Health.

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Editorial

A New Look for a Dynamic Journal


Thomas J. Goehl

As *Environmental Health Perspectives* begins publishing its 111th volume, perhaps the word that best describes us is "dynamic." As we try to continually meet the wants and needs of our readership we stretch, we expand, and sometimes we outgrow, but we continue to evolve. Some of the ways in which we are evolving include the following: This month we introduce *EHP Toxicogenomics*, a quarterly edition devoted to publishing news and research articles in toxicogenomics and the related disciplines of pharmacogenomics, proteomics, metabonomics, molecular epidemiology, translational aspects of genomic research, and molecular medicine. In the near future we also intend to transform the Children's Health section of *EHP* into its own quarterly edition. This year we will begin publishing special issues of *EHP* devoted to single topics such as environmental medicine. We are introducing a Book Review section in an effort to identify important books in the field of environmental health and to provide critical evaluations of them by leading scientific experts. We are also redesigning our website from a static site to a dynamic one that will better serve both our current readership and the wider universe of those seeking credible and timely environmental health information in context.

With all of these changes, one challenge we face is that of maintaining the *EHP* identity across a range of publications and formats. The new masthead that you see on this issue is our response to that challenge. Whenever you see this masthead, whether in print or online publication, you will know that you're reading credible peer-reviewed science and information published by the National Institute of Environmental Health Sciences.

Just as we strive to maintain our identity as we expand the scope and range of *EHP*, we also are faced with the challenge of maintaining our high standard of quality throughout our editions. To help guide these publications, we have added prominent science editors in the fields of medical environmental health, children's environmental health, and toxicogenomics. We also have begun the process of revamping our editorial boards. Distinguished boards of associate editors have been appointed for the monthly edition and for the toxicogenomics edition. Supporting the associate editors will be newly invigorated editorial review boards. We are very grateful for the service that these eminent scientists provide to *EHP*. With the help of our associate editors and editorial review board members, we hope to further improve our peer review process and to obtain sound input for *EHP*'s future growth.

Theirs is not the only input we seek, however. Our readers speak and we listen, so please continue to provide us with your feedback, ideas, suggestions, and even criticisms. Our goal is to provide the best news coverage and publish the most important research articles on the effects of the environment on human health, and we will continue to evolve to ensure that we do.

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